

NINETY-FOURTH ANNUAL TECHNICAL MEETING
OKLAHOMA ACADEMY OF SCIENCE
OKLAHOMA CITY UNIVERSITY

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PROGRAM SUMMARY

Friday, 4 November 2005

6:30 p.m. Executive Council Dinner and Meeting Faculty Lounge
C. Q. Smith Student-Faculty Center

Saturday, 5 November 2005

7:30 a.m. - 3:00 p.m. Registration for Technical Meeting Atrium
Meinders School of Business

8:30 a.m. - 11:00 a.m. Concurrent Scientific Paper Sessions

Section A	Biological Sciences – Botany	MSB	Room 221
Section A	Biological Sciences – Zoology.....	MSB	Room 222
Section B	Geology (meeting with Geography, Social Sciences)	MSB	Room 223
Section C	Physical Sciences	MSB	Room 206
Section D	Social Sciences (meeting with Geology, Geography).....	MSB	Room 223
Section E	Science Education	MSB	Room 207
Section F	Geography (meeting with Geology, Social Sciences)	MSB	Room 223
Section G	Fish and Wildlife Conservation	MSB	Room 204
Section H	Microbiology (meeting with Biomedical Sciences)	MSB	Room 203
Section I	Engineering Sciences	MSB	Room 309
Section J	Biochemistry and Biophysics	MSB	Room 202
Section K	Microscopy	MSB	Room 224
Section L	Mathematics & Computer Science	MSB	Room 313
Section M	Environmental Sciences & Planning	MSB	Room 314
Section N	Biomedical Sciences (meeting with Microbiology)	MSB	Room 203
All Sections	Posters	MSB	Hall of Honor

11:00 a.m. - 11:20 a.m. **Section Meetings** Meeting Rooms Above
Election of Section Vice-Chair.

11:30 a.m. - 12:00 p.m. **Academy Business Meeting** Kerr-McGee Auditorium
All OAS members are encouraged to attend. Meinders School of Business
Visitors are welcome.

12:00 p.m. - 1:30 p.m. **Academy Luncheon and Plenary Address** Scarab Room
Admission by ticket only. C. Q. Smith Student-Faculty Center

Marvita McGuire
Assistant Professor of Biology, Tulsa Community College
Adjunct Professor of Microbiology, OSU Center for Health Sciences
“Biotechnology Methods as Research Tools: Investigation of Antimicrobial Resistance”

2:00 p.m. - 5:00 p.m. Concurrent Scientific Paper Sessions

GENERAL INFORMATION

Name Badges: Name badges, provided upon registration, must be worn at all times by all individuals attending Academy sectional programs, business meetings, and luncheon. If your badge is not visible, you may be asked to leave by the persons in charge. Lost badges may be replaced at the registration desk upon verification of your registration documents. **All presenters must register and wear an official name badge.**

Parking: Two convenient lots are north and south of the Meinders School of Business building, but there are also other parking lots on campus.

On-site Registration Fees: Members - \$20.00; Non-members - \$25.00;
Student members - \$10.00; Student non-members - \$15.00;
Luncheon tickets (if available) - \$15.00

2005 and 2006 Dues are Payable: The OAS registration desk will accept dues payments.
Regular - \$25.00; Graduate Student - \$15.00; Collegiate Student - \$15.00;
Family - \$30.00; Life - \$500.00

Academy Business Meeting: The 94th Annual Business Meeting of the OAS will be held in the Kerr-McGee Auditorium of the Meinders School of Business at 11:30 a.m.

Academy Luncheon and Plenary Address: This luncheon will begin at noon in the Scarab Room of the C. Q. Student-Faculty Center. There will be a special speaker and award presentations.

Guidelines for Paper Publication: Papers may be published in the *Proceedings of the Oklahoma Academy of Science*, subject to the editorial policies as stated in *POAS*, Volume 82 and review of the Editorial Board. OAS members are charged \$30-\$35 per page and non-members are charged \$90-\$105 per page.

Executive Secretary-Treasurer: Inquiries concerning upcoming OAS activities and membership may be directed to Dr. David Bass, OAS Executive Secretary-Treasurer, Campus Box 90, University of Central Oklahoma, Edmond OK 73034, 405-974-5772, dbass@ucok.edu.

No Smoking: Please, no smoking in any of the buildings on the campus. Also, food and drink are not permitted in any meeting room. Thank you.

Refreshments: Food and drink will be served only in designated areas adjacent to the meeting rooms from 8:00 - 10:30 a.m. and from 2:00 - 3:30 p.m.

Assistance or Information: Look for individuals with OAS badges or host ribbons. These are OCU faculty and staff assigned to assist you.

Upcoming Meetings:

2006 Oklahoma Junior Academy of Science, East Central University, March 30-April 1

*Judges are needed! See Kathleen Donovan

2006 Spring Field Meeting, Beaver's Bend State Park, April 21-23

2006 Fall Technical Meeting, Rogers State University, Claremore

SECTION A: BIOLOGICAL SCIENCES – BOTANY
MSB Room 221

Morning Session – Moderator: Gloria Caddell,
University of Central Oklahoma

- 8:30 **The Fire History of a Cross Timbers Forest in the Tallgrass Prairie Preserve.** F. Shirakura, M. W. Palmer, Oklahoma State University.
- 8:45 **The Relation of Forest Vegetation to Soils and Geology in the Gulf Coastal Plain in Oklahoma.** R. John Taylor, Constance E. Taylor, Southeastern Oklahoma State University (retired).
- 9:00 ***Successional Changes in *Salix nigra* Forests at Tishomingo Wildlife Refuge, Johnston County, Oklahoma.** D. Moore, E. Corbett, S. Shoopman, S. Lewis, R. Reed, D. Bannister, Southeastern Oklahoma State University.
- 9:15 **Reproductive Isolation among North American Species of *Nuttallanthus* (Plantaginaceae).** Phillip Crawford, Wayne Elisens, University of Oklahoma.
- 9:30 Break
- 9:45 **A Reevaluation of the *Lindernia dubia* Species Complex.** Brent Berger, Wayne Elisens, University of Oklahoma.
- 10:00 **Influence of Plant Heterogeneity on the Distribution of Some Deer Species in a Wildlife Corridor in Nepal.** V. Thapa, Oklahoma State University.
- 10:15 ***Xanthoparmelia chlorochroa*, its possible distribution and toxicology in Oklahoma.** S. A. Strawn, S. G. Strawn, University of Central Oklahoma, Midwest Regional Medical Center.
- 11:00 **Section A Business Meeting, MSB 221**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**
- 2:00 **Flora of Oklahoma Project.** Flora Oklahoma Editorial Committee.

Posters:

***Monitoring Aquatic Macrophyte Populations in Manistee Lake, Michigan.**
U. U. Iyanam, E. Okafor, Oral Roberts University.

*Collegiate Academy; Undergraduate Competition

SECTION A: BIOLOGICAL SCIENCES – ZOOLOGY
MSB Room 222

**Morning Session – Moderator: Kenneth R. Hobson,
University of Oklahoma**

- 8:45 **Small Mammals of Western Oklahoma Wildlife Management Areas.** Deanna L. Martinez, Zachary P. Roehrs, Brandi S. Coyner, Ronald A. Van Den Bussche, Meredith J. Hamilton, David M. Leslie, David J. Schmidly, Oklahoma State University.
- 9:00 ***Consistency of Vigilance and Foraging Patterns in a Natural Population of Yellow-Bellied Marmots, *Marmota flaviventris*.** Ryan J. Trojan, Oklahoma State University.
- 9:15 ***Improved Light Quality: The Key to Successful Husbandry of Captive Green Anoles (*Anolis carolinensis*)?** Nick Rasmussen, Matthew Lovern, Oklahoma State University.
- 9:30 **Discovery of a Bicephalic Western Diamondback Rattlesnake, *Crotalus atrox* (Serpentes: Viperidae), from West Texas, with Comments on Other Monsters.** Chris T. McAllister, Angelo State University.
- 9:45 **Break**
- 10:15 ***An Investigation into the Helminth Parasites of Testudines of Southern Oklahoma.** Carol L. Bratt, LeeAnn Bowerman, Kenneth Andrews, East Central University.
- 10:30 **A Novel Method to Extract DNA from Testudine Carapacial Bone for Gel Electrophoresis.** M. W. Smith, J. Bethel, J. Isaacs, N. Murray, K. D. Andrews. East Central University.
- 10:45 ***The Prenatal Effects of Hypoxia on the Development of Insulin Resistant Diabetes.** Katie Torley, Russell V. Anthony, Jann Rhodes, Oklahoma Christian University, Colorado State University.
- 11:00 **Section A Business Meeting, MSB 221**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

*Collegiate Academy, Undergraduate Competition

SECTION A: BIOLOGICAL SCIENCES – ZOOLOGY
MSB Room 222

Afternoon Session – Moderator: Kenneth R. Hobson,
University of Oklahoma

- 2:00 **Aquatic Macroinvertebrates at the Chickasaw National Recreation Center.**
Nicholas J. Cheper, East Central University.
- 2:15 **Genetic Structure of Remnant Natural Populations Within the Desert Pupfish Complex.** Dustin G. Loftis, Anthony A. Echelle, Ronald A. Van Den Bussche, Oklahoma State University.
- 2:30 **Macroinvertebrate Community Structure and Physicochemical Conditions of the Roman Nose Spring System.** T. Rudisil, D. Bass, University of Central Oklahoma.
- 2:45 **Phylogenetic Relationships of the *Akodon varius* Group (Rodentia, Muridae) in South America.** Brandi S. Coyner, J. K. Braun, R. A. Van Den Bussche, M. A. Mares, R. M. Barquez, Oklahoma State University, Sam Noble Oklahoma Museum of Natural History, University of Oklahoma, University of Tucumán-Argentina.

Posters:

***Conjunctival Lymphoid Follicles in New World Rodents.** Aileen Cunliffe, Gregory M. Wilson, William Caire, Roger A. Astley, James Chodosh, University of Central Oklahoma, University of Oklahoma Health Sciences Center.

***Patterns of Mitochondrial Variation in Populations of the Texas Mouse, *Peromyscus attwateri*, in North America.** Vagan Mushegyan, Brennen Hall, Terry Johnson, Russell Pfau, Gregory M. Wilson, University of Central Oklahoma, Tarleton State University.

Long-Term Titer Study of West Nile Virus Antibodies in Small Mammals in Oklahoma County, Oklahoma. James C. Vaughn, William Caire, Linda Luna, Sherry Meeks, Gregory M. Wilson, University of Central Oklahoma.

*Collegiate Academy, Undergraduate Competition

SECTION B: GEOLOGY
(Meeting jointly with Social Sciences Section D and Geography Section F)
MSB Room 223

Morning Session – Moderator: Mark Micozzi
East Central University

- 8:30 Welcome/Introductions
- 8:45 **Planning and Executing an Itinerary for a Field Inventory of Waterfalls.**
Gregory Plumb, East Central University.
- 9:15 **Current Research at the Worcester/Park Hill Mission Cemetery.**
Lois E. Albert, University of Oklahoma.
- 9:45 Break
- 10:00 ***Land Use Functions in Downtown Enid, Oklahoma.** Corey Gillum,
Eric Williams, East Central University.
- 10:30 ***Using a Computerized Text Tool to Detect Deception about Self-Reported
Physical Health.** Anna Bueno, Mary Dzindolet, Cameron University.
- 11:00 **Sections B, D & F Joint Business Meeting, MSB 223**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

Posters:

***Suppression of Unwanted Memories in Various Age Groups.**
K. R. Wood, R. M. Herrera-Conaway, K. M. Donovan, University of
Central Oklahoma.

Conceptualization of a Proposed Linden Mills National Recreation Area.
Gregory Plumb, East Central University.

*Collegiate Academy; Undergraduate Competition

**SECTION C: PHYSICAL SCIENCES
MSB Room 206**

**Section Chair: Jo Conceicao,
Northwestern Oklahoma State University**

- 11:00 **Section C Business Meeting**, MSB 206
11:30 **Academy Business Meeting**, Kerr-McGee Auditorium, Meinders School of Business
12:00 **Academy Luncheon**, Scarab Room, C.Q. Smith Student-Faculty Center

Poster:

***Electronegativity, Bond Type and Electron Density.** Heath D. Stotts,
J. Conceicao, Northwestern Oklahoma State University.

*Collegiate Academy; Undergraduate Competition

SECTION D: SOCIAL SCIENCES
(Meeting jointly with Geology Section B and Geography Section F)
MSB Room 223

Morning Session – Moderator: Mark Micozzi
East Central University

- 8:30 Welcome/Introductions
- 8:45 **Planning and Executing an Itinerary for a Field Inventory of Waterfalls.**
Gregory Plumb, East Central University.
- 9:15 **Current Research at the Worcester/Park Hill Mission Cemetery.**
Lois E. Albert, University of Oklahoma.
- 9:45 Break
- 10:00 ***Land Use Functions in Downtown Enid, Oklahoma.** Corey Gillum,
Eric Williams, East Central University.
- 10:30 ***Using a Computerized Text Tool to Detect Deception about Self-Reported
Physical Health.** Anna Bueno, Mary Dzindolet, Cameron University.
- 11:00 **Sections B, D & F Joint Business Meeting, MSB 223**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

Posters:

***Suppression of Unwanted Memories in Various Age Groups.**
K. R. Wood, R. M. Herrera-Conaway, K. M. Donovan, University of
Central Oklahoma.

Conceptualization of a Proposed Linden Mills National Recreation Area.
Gregory Plumb, East Central University.

*Collegiate Academy; Undergraduate Competition

SECTION E: SCIENCE EDUCATION
MSB Room 207

Moderator: Kurtis Koll
Cameron University

- 8:30 **Visual Representations Aid Teaching Electromagnetism to College Students.**
K. Williams, East Central University.
- 9:00 **Freshman Chemistry Laboratory: A Forensic Chemistry Experience.**
K. J. Koll, Cameron University.
- 9:30 **Developing an Introductory GIS Course for Natural Resource Students.**
Erica A. Corbett, Douglas R. Wood, Southeastern Oklahoma State University.
- 11:00 **Section E Business Meeting, MSB 207**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

SECTION F: GEOGRAPHY
(Meeting jointly with Geology Section B and Social Sciences Section D)
MSB Room 223

Morning Session – Moderator: Mark Micozzi
East Central University

- 8:30 Welcome/Introductions
- 8:45 **Planning and Executing an Itinerary for a Field Inventory of Waterfalls.**
Gregory Plumb, East Central University.
- 9:15 **Current Research at the Worcester/Park Hill Mission Cemetery.**
Lois E. Albert, University of Oklahoma.
- 9:45 Break
- 10:00 ***Land Use Functions in Downtown Enid, Oklahoma.** Corey Gillum,
Eric Williams, East Central University.
- 10:30 ***Using a Computerized Text Tool to Detect Deception about Self-Reported
Physical Health.** Anna Bueno, Mary Dzindolet, Cameron University.
- 11:00 **Sections B, D & F Joint Business Meeting, MSB 223**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

Posters:

***Suppression of Unwanted Memories in Various Age Groups.**
K. R. Wood, R. M. Herrera-Conaway, K. M. Donovan, University of
Central Oklahoma.

Conceptualization of a Proposed Linden Mills National Recreation Area.
Gregory Plumb, East Central University.

*Collegiate Academy; Undergraduate Competition

SECTION G: FISH AND WILDLIFE CONSERVATION
MSB Room 204

**Morning Session – Moderator: Michael Husak,
Cameron University**

- 8:30 **The Role of Fluvial Geomorphic Features in the Distribution of Freshwater Mussels (Bivalvia: Unionidae) in the Kiamichi River, Oklahoma.** S. G. Rust, Oklahoma State University.
- 8:45 ***Ross Lake Rainbow Trout Project: Barriers.** Ryan Hostetler, Oklahoma Christian University.
- 9:00 **Buteo Habitat Partitioning in Cimarron County, Oklahoma.** Scott McConnell, Timothy J. O'Connell, David M. Leslie, Jr. Oklahoma State University.
- 9:15 **A Herpetological Survey of the Black Mesa Ecoregion, with an Emphasis on the Comparative Ecology of Oklahoma's Horned Lizards.** T. S. Periard, S. F. Fox, D. M. Leslie, R. C. Stark. Oklahoma State University, Oklahoma Cooperative Fish and Wildlife Research Unit, United States Fish and Wildlife Service (Tulsa).
- 9:30 **Habitat Use and Ecology of the Texas Horned Lizard at an Urban Air Force Base.** D. A. Endriss, E. C. Hellgren, S. F. Fox, R. Moody, Oklahoma State University, Southern Illinois University, Tinker Air Force Base.
- 9:45 Break
- 10:00 ***Zebra Mussel Monitoring in the Arkansas River Navigation System and Risk Assessment for Two Bureau of Reclamation Reservoirs.** Sam Ziara, Brett Cooper, James K. Schooley, Northeastern State University.
- 10:15 ***The Effects of Temperature, Origin, and Ration Size on Shell Length Growth of the Zebra Mussel (*Dreissena polymorpha*).** Brett Cooper, Sam Ziara, James K. Schooley, Northeastern State University.
- 10:30 **Nest Site Selection and Nest Success of Smallmouth Bass in Baron Fork Creek, Oklahoma.** D. C. Dauwalter, W. L. Fisher, Oklahoma State University, Oklahoma Cooperative Fish and Wildlife Research Unit, United States Geological Survey.
- 10:45 ***Microhabitat Use of Smallmouth Bass in the Baron Fork Creek, Oklahoma.** J. D. Fore, D. C. Dauwalter, W. L. Fisher; Oklahoma State University, Oklahoma Cooperative Fish and Wildlife Research Unit, United States Geological Survey.
- 11:00 **Section G Business Meeting, MSB 204**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

*Collegiate Academy; Undergraduate Competition

SECTION G: FISH AND WILDLIFE CONSERVATION
MSB Room 204

**Afternoon Session – Moderator: Craig Davis,
Oklahoma State University**

- 2:00 **Investigating the Stream Fishes of Tinker Air Force Base.** Roger Lemmons, Ray Moody, Courtney Lemmons; University of Oklahoma, Tinker Air Force Base, Edmond Public Schools.
- 2:15 **River Otter (*Lontra canadensis*) Distribution and Current Research in Oklahoma.** Dominic Barrett, David M. Leslie, Jr., Oklahoma Cooperative Fish and Wildlife Research Unit, Oklahoma State University.
- 2:30 **Development of an Internet-Based GIS to Manage and Disseminate Fish Museum Collection Information in Oklahoma.** J. G. Freund, W. L. Fisher, A. A. Echelle, C. Hargrave, M. Brooks, A. Fortner, E. Marsh-Matthews, Oklahoma Cooperative Fish and Wildlife Research Unit, Oklahoma State University, United States Geological Survey, University of Oklahoma, Sam Noble Oklahoma Museum of Natural History.
- 2:45 Break
- 3:00 **Noninvasive Sampling to Elucidate Genetic Structure and Abundance of Black Bears (*Ursus americanus*) in Oklahoma.** L. C. Gardner-Santana, R. A. Van Den Bussche, E. C. Hellgren, D. M. Leslie, Jr., Oklahoma Cooperative Fish and Wildlife Research Unit, Oklahoma State University.
- 3:15 **Trapping and Hair Sampling of Black Bears (*Ursus americanus*) in Southeastern Oklahoma.** Angela G. Brown, Lynne Gardner-Santana, Eric C. Hellgren, Ron Van Den Bussche, David M. Leslie, Jr., Oklahoma State University, Southern Illinois University.
- 3:30 **An Evaluation of Landscape and Local Factors that Play a Role in the Establishment, Spread, and Dominance of Invasive Plants in the Rainwater Basin Region of Nebraska.** A. D. Estep, Oklahoma State University.

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SECTION H: MICROBIOLOGY
(Meeting jointly with Biomedical Sciences Section N)
MSB Room 203

Moderator: Arden Aspedon,
Southwestern Oklahoma State University

- 8:30 ***Analyses of Bone in Mouse Model of Chronic Inflammation.** Meagan L. Johnson, Oklahoma Christian University.
- 8:45 ***The Attenuation of Chronic Pain by Hind Paw Plantar Injection of 6-diazo-5-oxo-L-norleucine in Rats.** Brett Herzog, Oral Roberts University.
- 9:00 ***A Confocal Analysis of the Relationship Between Dopaminergic Amacrine Cell Varicosities and AII Amacrine Cell Lobules.** Alexander V. Barrero, University of Texas School of Medicine.
- 9:15 **Keratinocyte Replicative Senescence: When Aging is Skin Equivalent Deep.** M. B. Vaughan, W. E. Wright, J. W. Shay, University of Central Oklahoma, University of Texas Southwestern Medical Center.
- 9:30 ***Hemolytic Activity and Specificity of Intermedilysin Undecapeptide Mutants.** Brandon Driver, Oklahoma Christian University.
- 9:45 ***The Biogeography of Sulfate-Reducing Bacteria.** Andrew C. Bussman, William A. Rosche, The University of Tulsa.
- 10:00 ***Screening and Characterization of *Escherichia coli* with Elevated Mutation Rates in Stationary Phase.** T. D. Schoedel, W. A. Rosche, The University of Tulsa.
- 10:15 **The Role of σ^{54} -Dependent Transcriptional Activators in the Virulence and Fitness of *Pseudomonas syringae* pv. *tomato* DC3000.** Christina M. Baker, Carol L. Bender, Oklahoma State University.
- 10:30 **Rhizoremediation: Assessment of PAH-Degrading Bacteria in the Root Zone of Mulberry (*Morus* sp).** Michael D. Kyle, John S. Fletcher, David P. Nagle, University of Oklahoma.
- 10:45 **Osmoprotective Genes in *Pseudomonas aeruginosa*.** Arden Aspedon, Southwestern Oklahoma State University.
- 11:00 **Sections H & N Business Meeting, MSB 203**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty**
- Poster: **The Effects of Stretching, Exercise, and Mat Work on the Posture of the Older Community.** Keri B. Sherman, Oral Roberts University.

*Collegiate Academy; Undergraduate Competition

**SECTION I: ENGINEERING SCIENCES
MSB Room 309**

**Moderator: Wei R. Chen
University of Central Oklahoma**

- 9:00 **3D Thermal Distribution Determination Using Magnetic Resonance Imaging (MRI) During Laser Therapy.** Surya C. Gnyawali, Yichao Chen, Wei R. Chen, Oklahoma State University, University of Central Oklahoma.
- 9:15 **Numerical Simulation of Thermal Effects on Flow Injection and Thermocapillary Pumping Using the Volume of Fluid Method.** M. A. Sanchez, F. C. Lai, C. A. Sanchez, University of Central Oklahoma, University of Oklahoma, Riskmetrics, Inc.
- 9:30 **Temperature Distribution in Biological Tissues using Monte Carlo Simulation.** Yichao Chen, Surya C Gnyawali, and Wei R. Chen, University of Central Oklahoma, Oklahoma State University.
- 9:45 **Electrodynamics of a Gauss Gun.** Erik Gonzales, East Central University.
- 10:00 **Investigating Orbital Angular Momentum of Photon Using Photon Mode Sorter.** April-Dowel-Bohannan, Baha Jassemnejad, University of Central Oklahoma.
- 10:15 **Many Body Simulations of Linearized Gravitation in the Quasi-Static Approximation.** Abdellah Ait Moussa, Weldon Wilson, University of Central Oklahoma.
- 11:00 **Section I Business Meeting, MSB 309**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

SECTION J: BIOCHEMISTRY & BIOPHYSICS
MSB 202

Moderator: Andrew Mort,
Oklahoma State University

- 9:00 **Insights into Novel Zinc-Finger Domains: B-Boxes with a Ring and not a Ring.** Michael Massiah, Oklahoma State University.
- 9:15 ***EphB1, but not its Ligand EphrinB2, is Expressed in Glioblastoma Multiforme.** D. Branch, D. Gibo, W. Debinski, Oklahoma Christian University, Wake Forest University Health Sciences.
- 9:30 **Use of High Specificity Enzymes in Plant Cell Wall Analysis.** Prasanna Vasu, Andrew J. Mort, Oklahoma State University.
- 9:45 **Three-Dimensional Structure of Hepatitis B Virus Capsid Complexed with an Assembly Misdirector.** Christina R. Bourne, Adam Zlotnick, OU Health Sciences Center.
- 10:00 **Analysis of the 3' Cap-Independent Translational Enhancer of *Maize necrotic streak virus* in Wheat Germ Extract.** Kay Scheets, Oklahoma State University.
- 10:15 ***The Analysis of the Administration of Azacytidine to Reverse the Silencing of the Herpes Simplex Virus-1 Thymidine Kinase Gene Induced by Gancyclovir Injections in Transgenic Mice.** Jennifer Roe, Oklahoma Christian University.
- 10:30 **Partial Characterization of the Most Abundant Protein in Ixodid Tick Saliva and Hemolymph.** W. Justin Cordill, Robin D. Madden, Jack W. Dillwith, Oklahoma State University.
- 11:00 **Section J Business Meeting, MSB 202**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

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**SECTION K: MICROSCOPY
MSB 224**

**Afternoon Session – Moderator: Greg Strout,
University of Oklahoma**

- 2:00 ***Establishing a Centrin-GFP Stable Cell Line to Monitor Cytokinesis by Live-Cell Fluorescence Microscopy.** L. J. Petersen, S. M. Plafker, Oklahoma Christian University, Oklahoma University Health Sciences Center.
- 2:20 ****Flux Pinning Effects of Nanoscale Hole Arrays in Niobium Thin Films.**
J. C. Keay, P. R. Larson, K. L. Hobbs, O. K. Awitor, S. Q. Murphy, M. B. Johnson, J. R. Kirtley, University of Oklahoma, IBM Research Division.
- 2:40 ****Optically-Resonant Atomically-Flat Nanosurface Substrates for Scanning Tunneling Microscopy (STM) and Photonic Studies.** D. H. Dahanayaka, D. W. Kelle, D. J. Wasielewski, E. S. Day, D. R. White, L. A. Bumm.
- 3:00 **Role of Morphology of Bimetallic Catalyst in the Synthesis of Vertically Aligned Single-Walled Carbon Nanotubes.** Liang Zhang, Daniel E. Resasco, University of Oklahoma.
- 3:20 **Defect Filtering Buffer Layer for InSb Quantum Wells Grown on GaAs (001).**
T. D. Mishima, M. Edirisooriya, M. B. Santos, University of Oklahoma.

*Collegiate Academy; Undergraduate Competition
**OMS Timpano Competition

**SECTION L: MATHEMATICS & COMPUTER SCIENCE
MSB Room 313**

**Moderator: Anita Walker,
East Central University**

- 9:15 **Graph-Coloring Algorithms for the Recognition of Ring-Mesh Network Topologies.** A. Kazmierczak, J. Goulden, Oklahoma City University.
- 9:30 **What Have We Done to College Algebra?** Anita Walker, East Central University.
- 9:45 **Advising Software, Part II.** Bill Walker, East Central University.
- 10:00 **Security in GPRS.** Reena Saini, Art Kazmierczak, Oklahoma City University.
- 10:15 **The Programming Language Two Step in XML.** Clay Carley, East Central University.
- 10:30 ***Just Sorting.** Jennifer Nicholson, East Central University.
- 10:45 ***CPU Scheduling Algorithms: A Fibonacci Approach to Round Robin.** Charley Saint, East Central University.
- 11:00 **Section L Business Meeting, MSB 313**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

*Collegiate Academy; Undergraduate Competition

SECTION M: ENVIRONMENTAL SCIENCES & PLANNING
MSB Room 314

Moderators: Charles Crittell, Daniel M. McInness,
East Central University

- 8:30 ***Determining the Limiting Factor for Productivity in Lake Tenkiller, Oklahoma.** Stephanie Buck, Tony Clyde, James K. Schooley, Northeastern State University, US Army Corps of Engineers - Tulsa District.
- 8:15 ***Sir Geoffrey Jellicoe: Leading British Landscape Architect of the 20th Century.** Darla Leach, Oklahoma State University.
- 9:00 ***Christopher Tunnard: Leader of the Modern Movement in Landscape Architecture.** Seth Slifer, Oklahoma State University.
- 9:15 ***Hideo Sasaki: Founder of SWA Landscape Architecture Office.** Andrew Moore, Oklahoma State University.
- 9:30 ***John Lyle: Sustainability in Landscape Architecture.** Caleb Wetmore, Oklahoma State University.
- 9:45 ***George Hargreaves: Landscape Architect of the 21st Century.** Heather Applegate, Oklahoma State University.
- 10:00 **Stowe Estate: Proto Type for the English Landscape Design Period: 1750-1850.** Charles Leider, Oklahoma State University.
- 10:15 **Field and Laboratory Investigation of an Ammonia Dominated Industrial Effluent.** Phillip Cravatt, Oklahoma State University.
- 10:30 **Responses of Benthic Macroinvertebrates to Metals, (Beaver Creek, Ottawa County), Tar Creek Superfund Site, Oklahoma.** Sherri Dunn, Oklahoma State University.
- 10:45 **Evaluating Water Quality Impacts of Shoreline Septic Systems on Grand Lake Reservoir.** Kevin Burgess, Oklahoma State University.
- 11:00 **Field Validation of Toxicity Tests to Evaluate the Potential for Beneficial Use of Produced Water.** Jonathan C. Fisher, Joseph R. Bidwell, Oklahoma State University.
- 11:15 **Section M Business Meeting, MSB 314**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty Center**

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SECTION N: BIOMEDICAL SCIENCES
(Meeting jointly with Microbiology Section H)
MSB Room 203

Moderator: Arden Aspedon,
Southwestern Oklahoma State University

- 8:30 ***Analyses of Bone in Mouse Model of Chronic Inflammation.** Meagan L. Johnson, Oklahoma Christian University.
- 8:45 ***The Attenuation of Chronic Pain by Hind Paw Plantar Injection of 6-diazo-5-oxo-L-norleucine in Rats.** Brett Herzog, Oral Roberts University.
- 9:00 ***A Confocal Analysis of the Relationship Between Dopaminergic Amacrine Cell Varicosities and AII Amacrine Cell Lobules.** Alexander V. Barrero, University of Texas School of Medicine.
- 9:15 **Keratinocyte Replicative Senescence: When Aging is Skin Equivalent Deep.** M. B. Vaughan, W. E. Wright, J. W. Shay, University of Central Oklahoma, University of Texas Southwestern Medical Center.
- 9:30 ***Hemolytic Activity and Specificity of Intermedilysin Undecapeptide Mutants.** Brandon Driver, Oklahoma Christian University.
- 9:45 ***The Biogeography of Sulfate-Reducing Bacteria.** Andrew C. Bussman, William A. Rosche, The University of Tulsa.
- 10:00 ***Screening and Characterization of *Escherichia coli* with Elevated Mutation Rates in Stationary Phase.** T. D. Schoedel, W. A. Rosche, The University of Tulsa.
- 10:15 **The Role of σ^{54} -Dependent Transcriptional Activators in the Virulence and Fitness of *Pseudomonas syringae* pv. *tomato* DC3000.** Christina M. Baker, Carol L. Bender, Oklahoma State University.
- 10:30 **Rhizoremediation: Assessment of PAH-Degrading Bacteria in the Root Zone of Mulberry (*Morus* sp).** Michael D. Kyle, John S. Fletcher, David P. Nagle, University of Oklahoma.
- 10:45 **Osmoprotective Genes in *Pseudomonas aeruginosa*.** Arden Aspedon, Southwestern Oklahoma State University.
- 11:00 **Sections H & N Business Meeting, MSB 203**
- 11:30 **Academy Business Meeting, Kerr-McGee Auditorium, Meinders School of Business**
- 12:00 **Academy Luncheon, Scarab Room, C.Q. Smith Student-Faculty**
- Poster: **The Effects of Stretching, Exercise, and Mat Work on the Posture of the Older Community.** Keri B. Sherman, Oral Roberts University.

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SPECIAL GUEST OF THE 94th ANNUAL MEETING

Marvita D. McGuire, Ph.D. **Luncheon Speaker**

Dr. McGuire loves to talk about her favorite bacteria *Staphylococcus spp.* She describes herself as a professional student who does research for the love of it, and now gets paid to learn and teach. She has taught at Tulsa Community College for the past thirteen years and is currently Adjunct Professor of Microbiology at Oklahoma State University Center for Health Sciences. She served as Adjunct Professor at Northeastern State University from 1984 – 2003. She earned her B.S. degree in Biology from Southern Nazarene University and her MT (ASCP) from Hillcrest School of Medical Technology in Tulsa. After working in the field of medical technology for a few years she studied Clinical Sciences at the University of San Francisco earning a M.S. degree in 1981. She earned the Ph.D. degree in Biomedical Sciences from Oklahoma State University in 2001. Dr. McGuire did post-doctoral research at OSUCHS through a grant from Glaxo Smith-Kline. She participated in a Summer Workshop for Advancement of Microbial Physiology at the University of Georgia. OSU College of Osteopathic Medicine in Tulsa named her paper the Best Graduate Student Presentation in 2000. In 2001 she received a Faculty Innovative Grant from Public Service Company of Oklahoma. She served as a Mentor for “Oklahoma Partners in Biological Sciences” through a grant to OSU in Stillwater. Dr. McGuire’s publications explore morphological, biochemical and physiological characterization of *Staphylococcus spp.* and their resistance, and possible mechanisms of resistance, to antibiotics and antimicrobial agents. She is a member of our organization and has published in our Proceedings volume 80. She is also a member of the American Society of Microbiology and the American Society of Clinical Pathologists. Dr. McGuire is one of Oklahoma’s own and exemplifies the mission of Oklahoma Academy of Science

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